

**Fig.1**

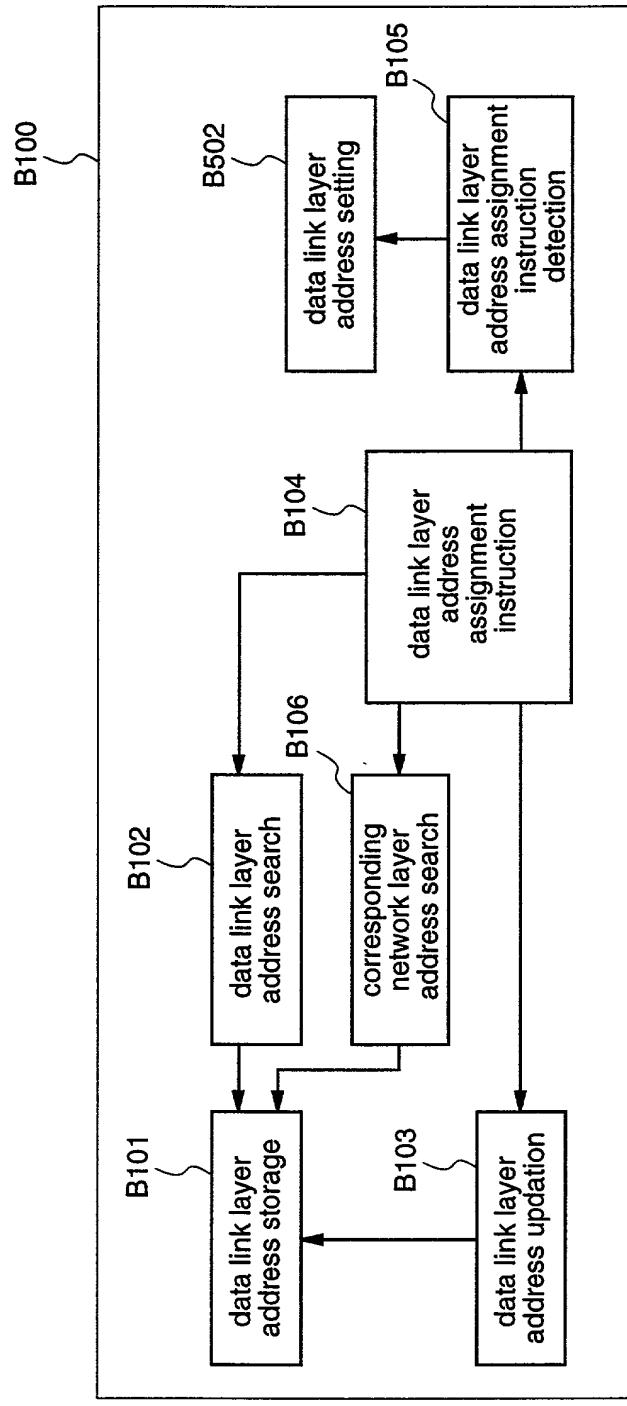


Fig.2

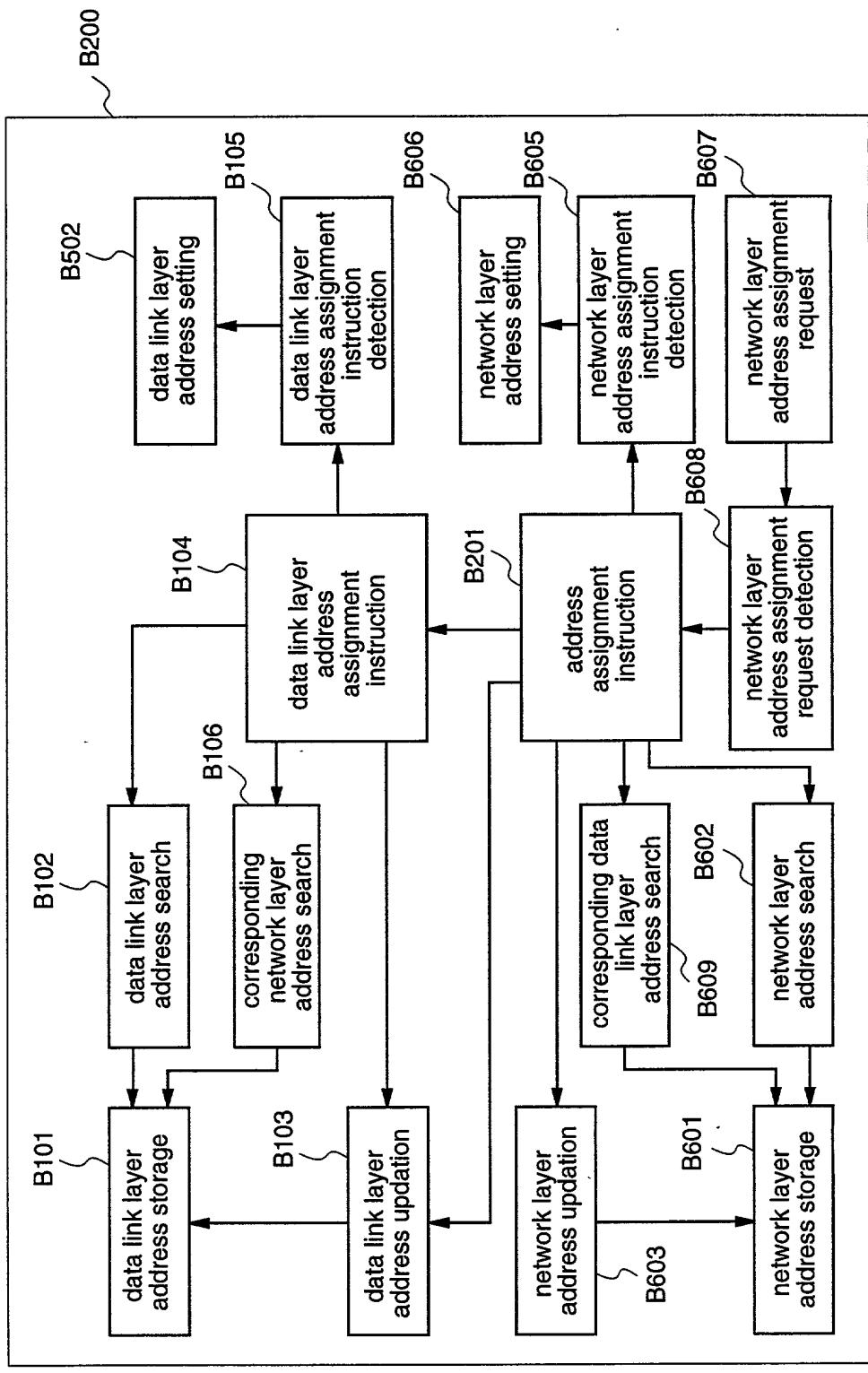


Fig.3

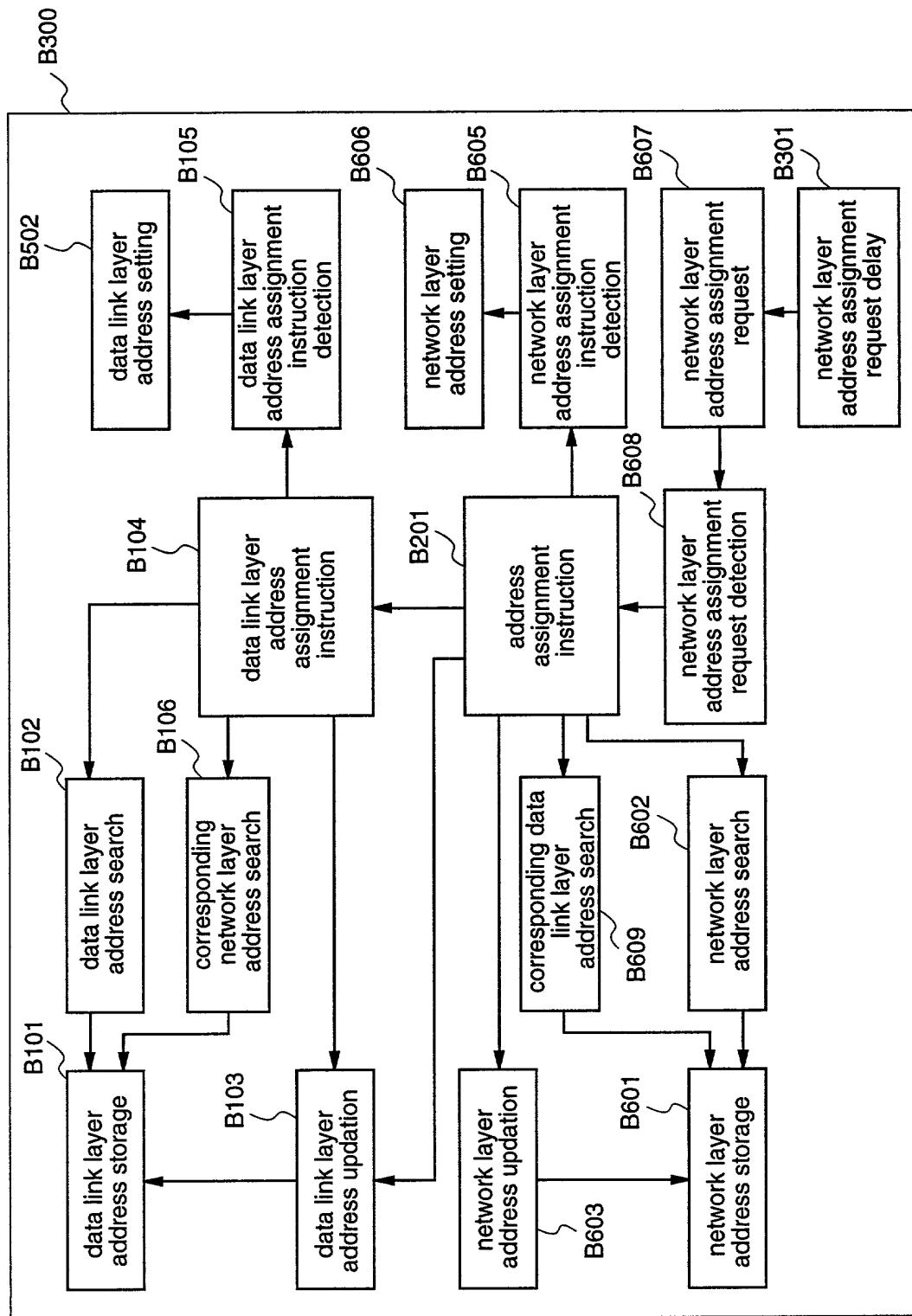


Fig.4

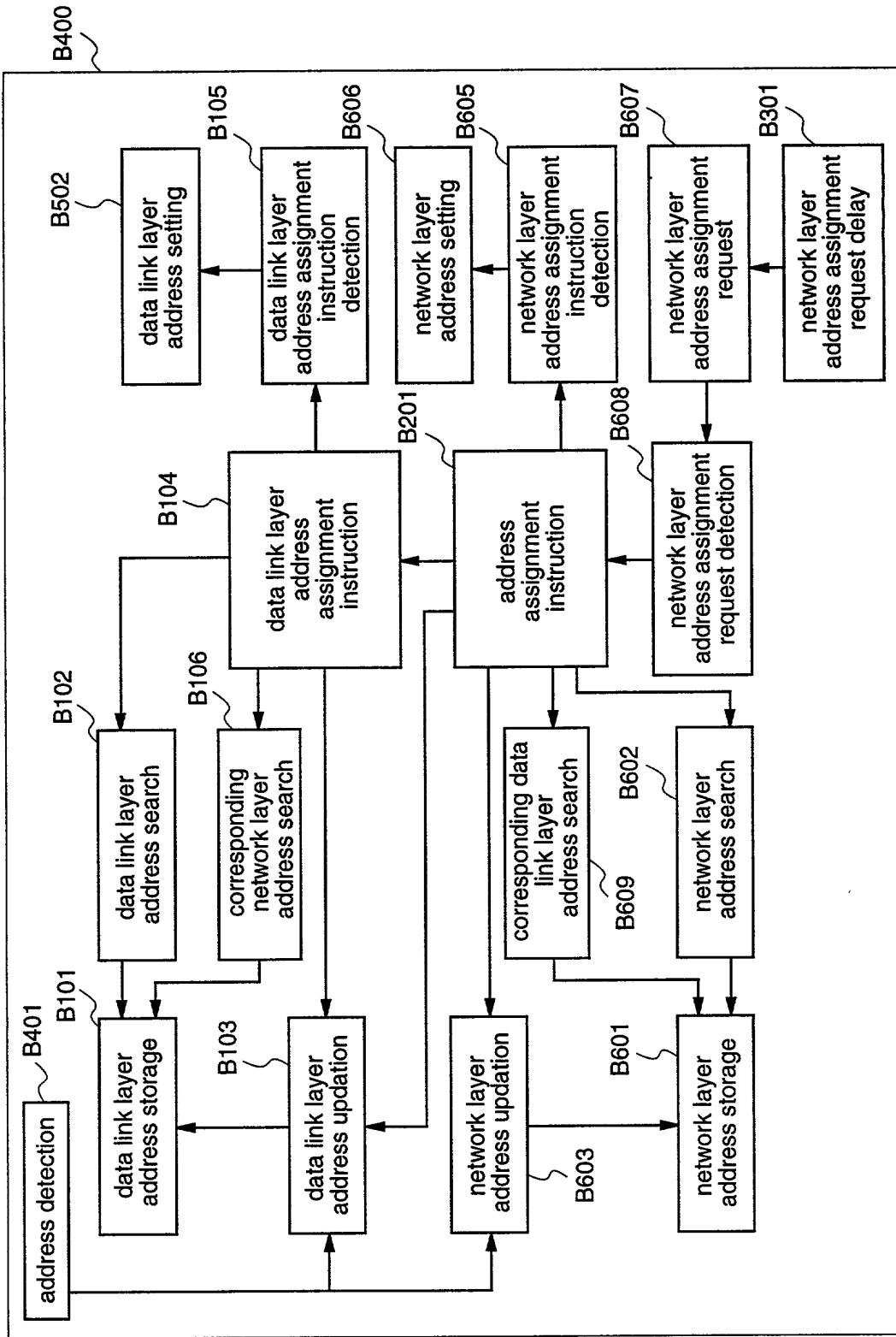
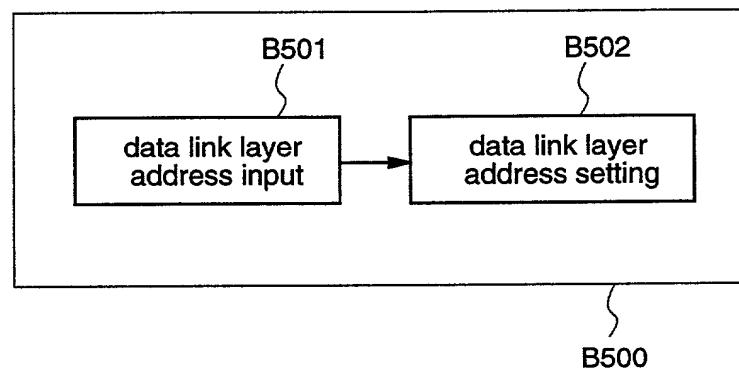


Fig.5 Prior Art



**Fig.6 Prior Art**

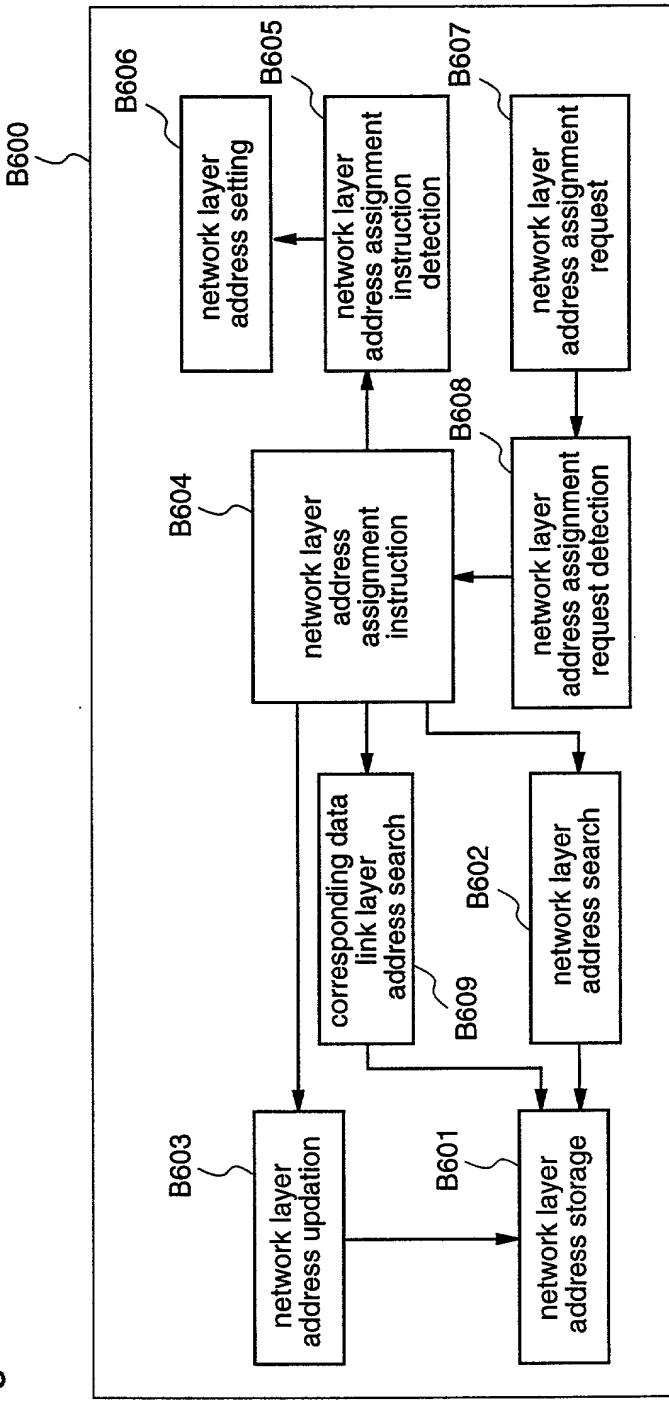


Fig.7

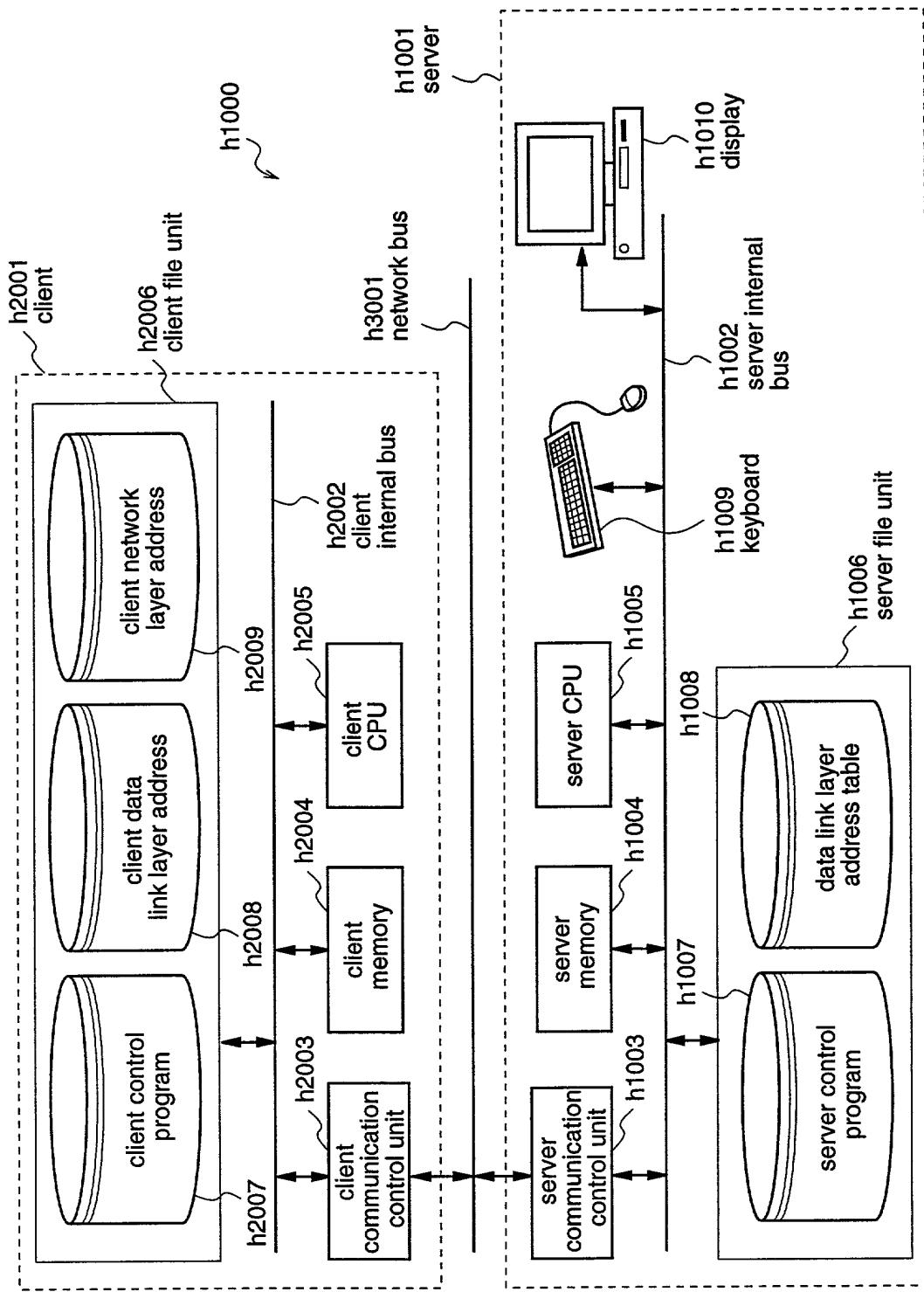


Fig.8

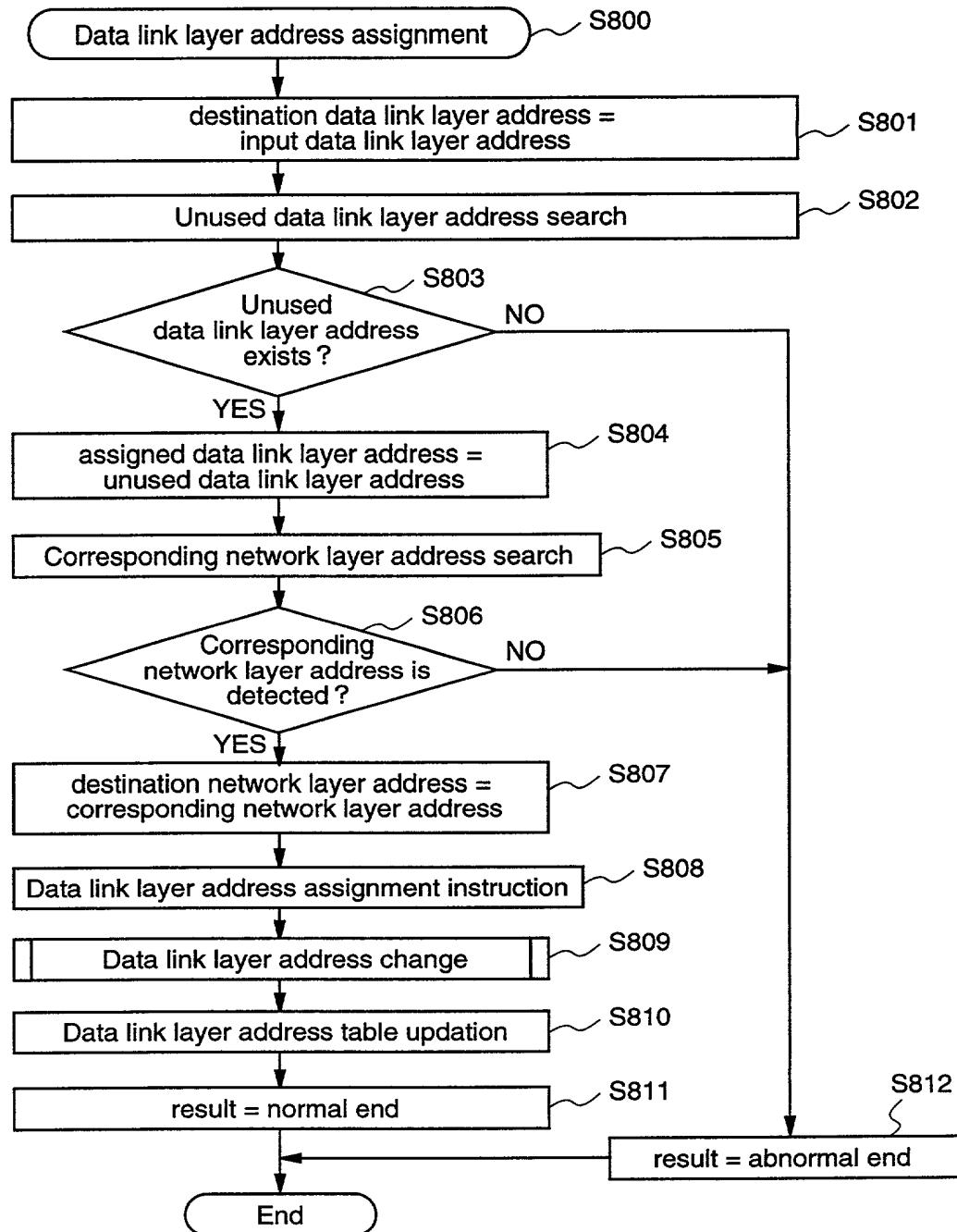


Fig.9

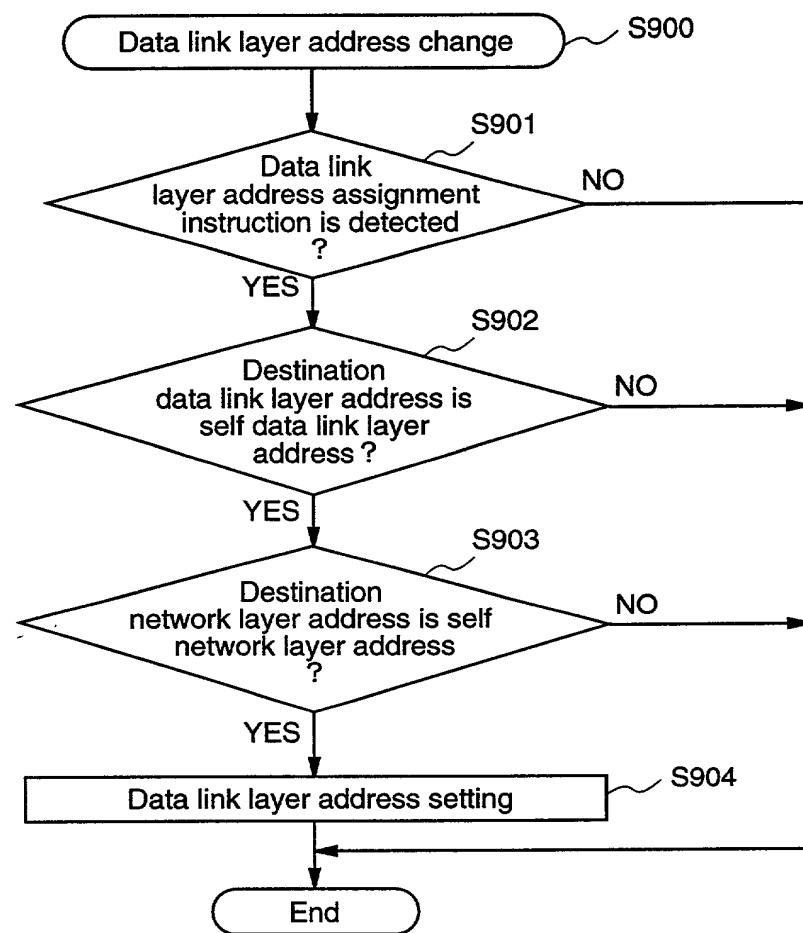


Fig.10(A)

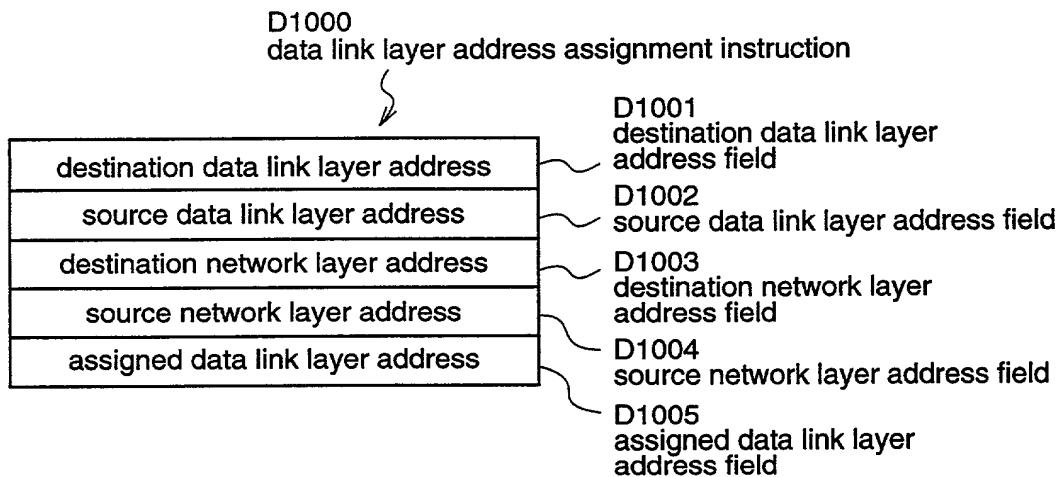


Fig.10(B)

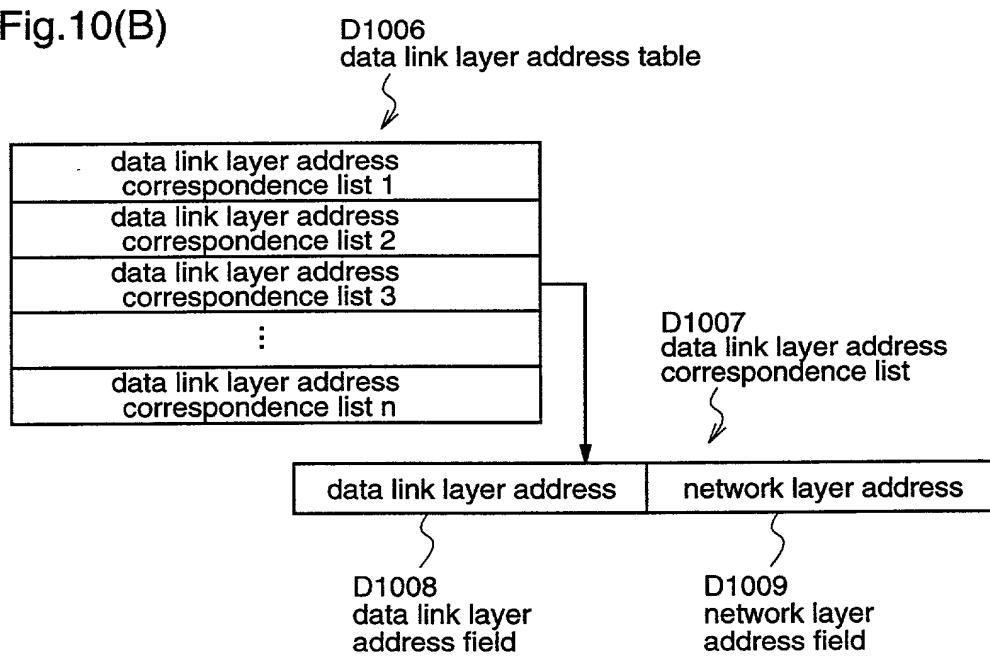


Fig.11

(a1) address state of server

| network layer<br>address | data link<br>layer address |
|--------------------------|----------------------------|
| NA1                      | DA1                        |

(a2) address state of server

| network layer<br>address | data link<br>layer address |
|--------------------------|----------------------------|
| NA1                      | DA1                        |

(b1) address state of client 1

| network layer<br>address | data link<br>layer address |
|--------------------------|----------------------------|
| NA2                      | DA2                        |

(b2) address state of client 1

| network layer<br>address | data link<br>layer address |
|--------------------------|----------------------------|
| NA2                      | DA3                        |

(d1) data link layer  
address table

| data link<br>layer address | network layer<br>address |
|----------------------------|--------------------------|
| DA1                        | NA1                      |
| DA2                        | NA2                      |
| DA3                        | NULL                     |
| DA4                        | NULL                     |

(d2) data link layer  
address table

| data link<br>layer address | network layer<br>address |
|----------------------------|--------------------------|
| DA1                        | NA1                      |
| DA2                        | NULL                     |
| DA3                        | NA2                      |
| DA4                        | NULL                     |

Fig.12

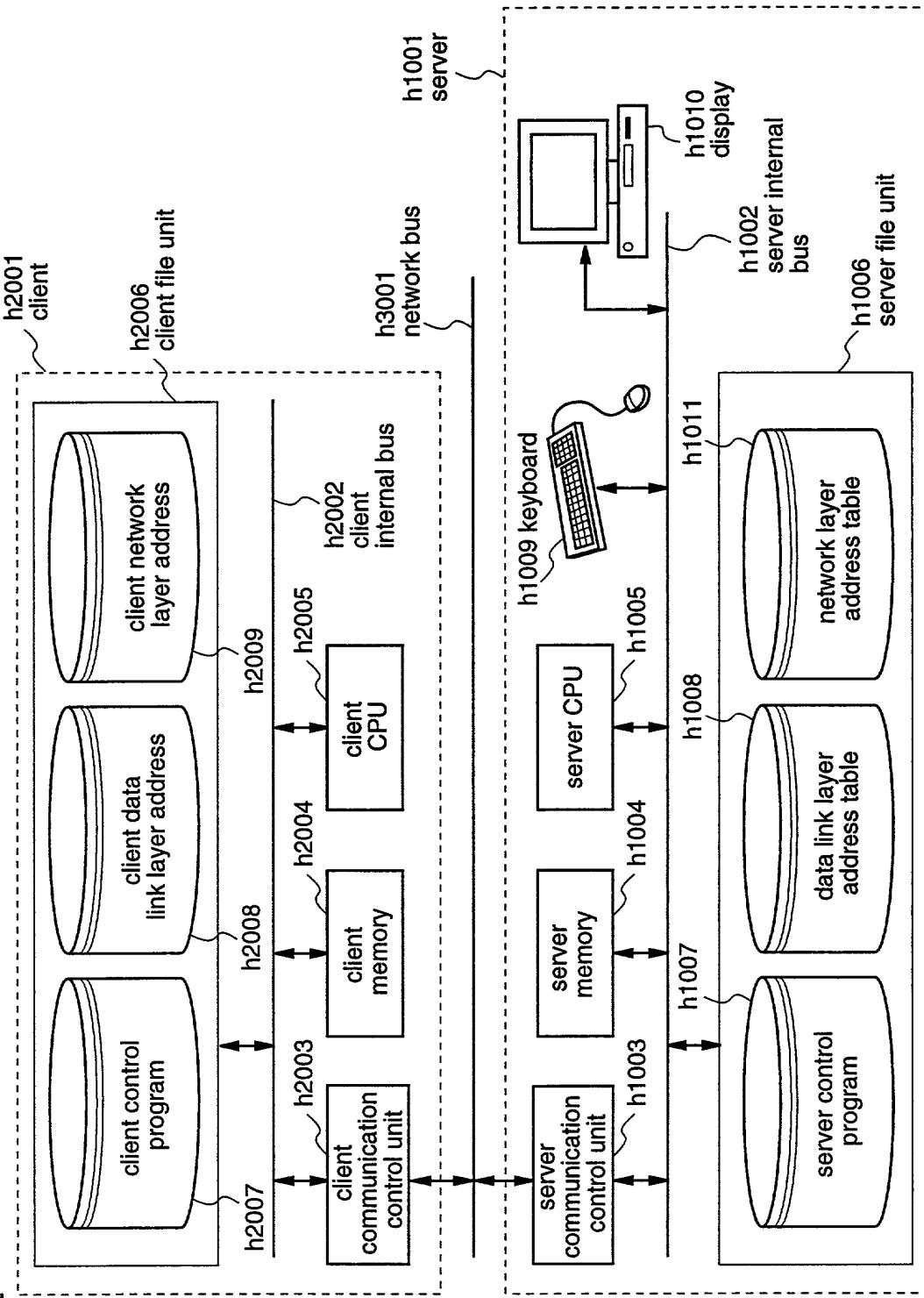


Fig.13

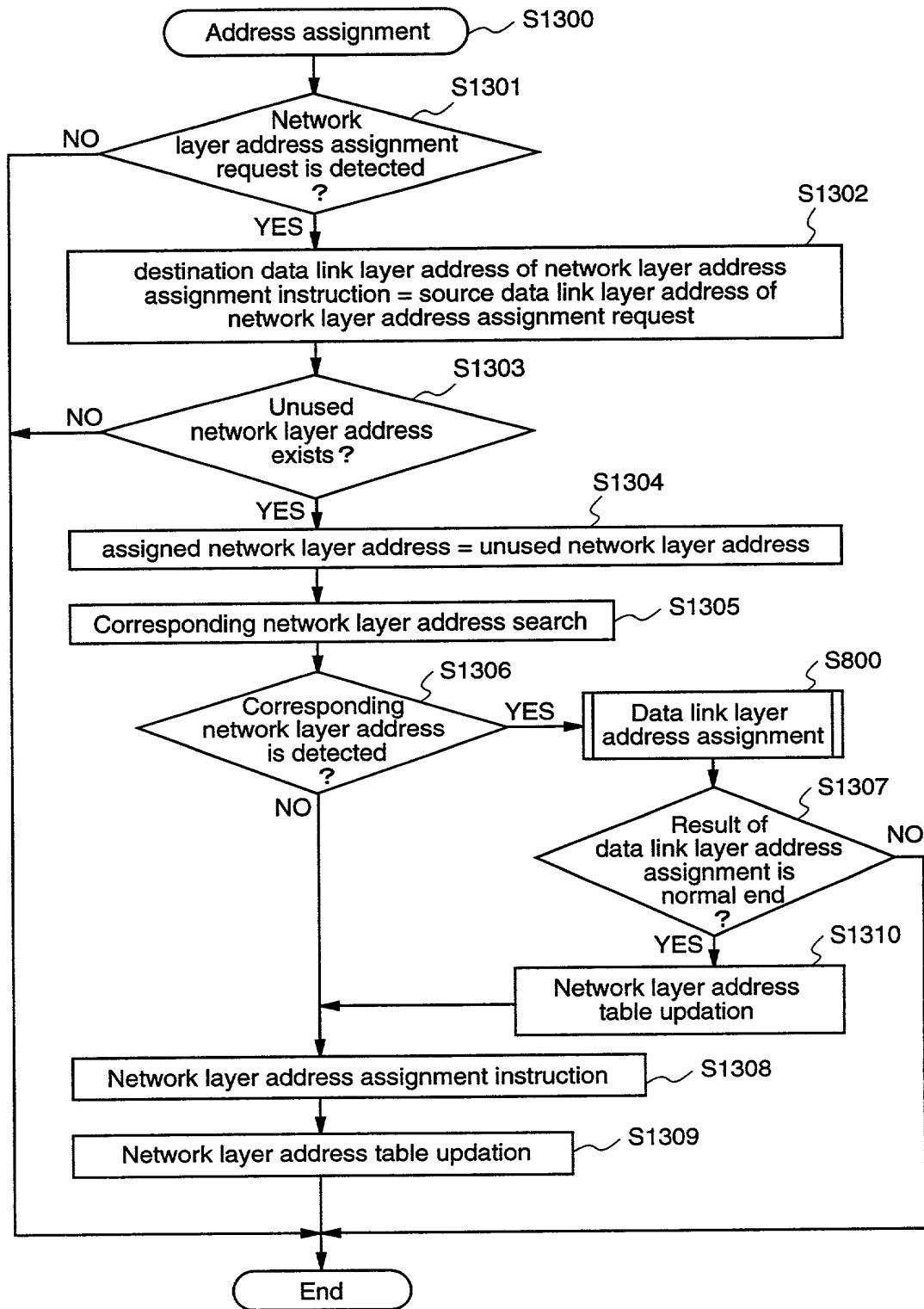


Fig.14

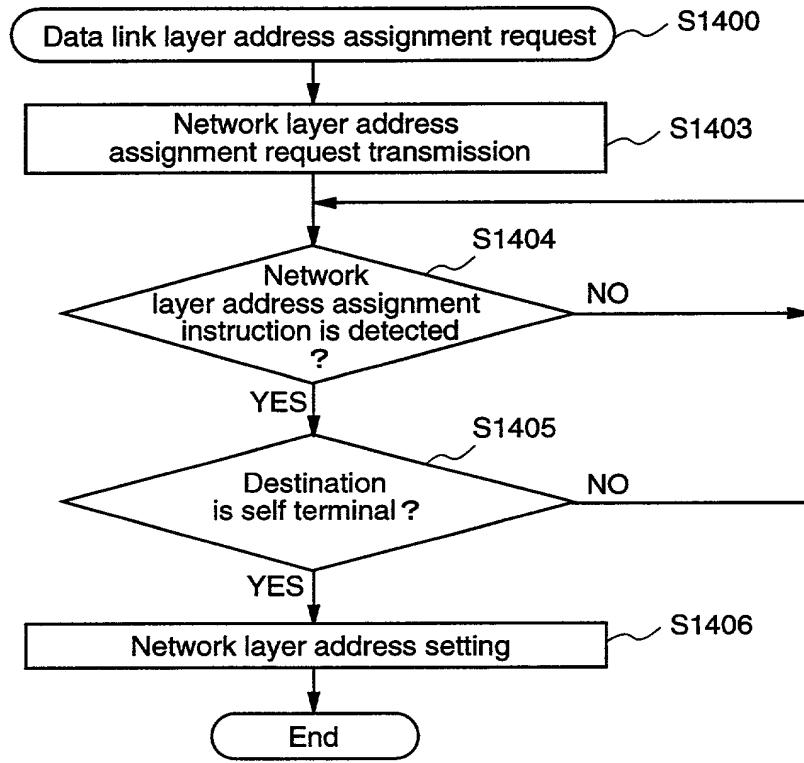


Fig.15 (A)

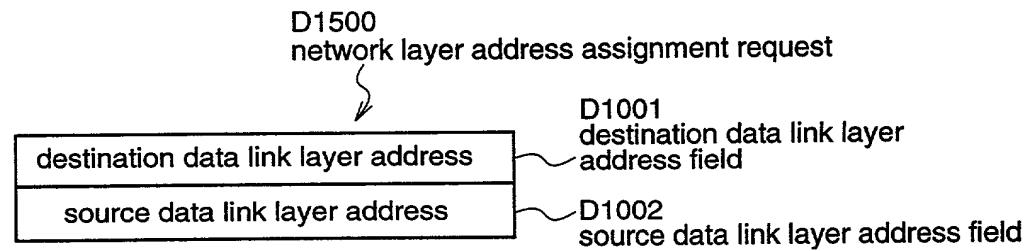


Fig.15 (B)

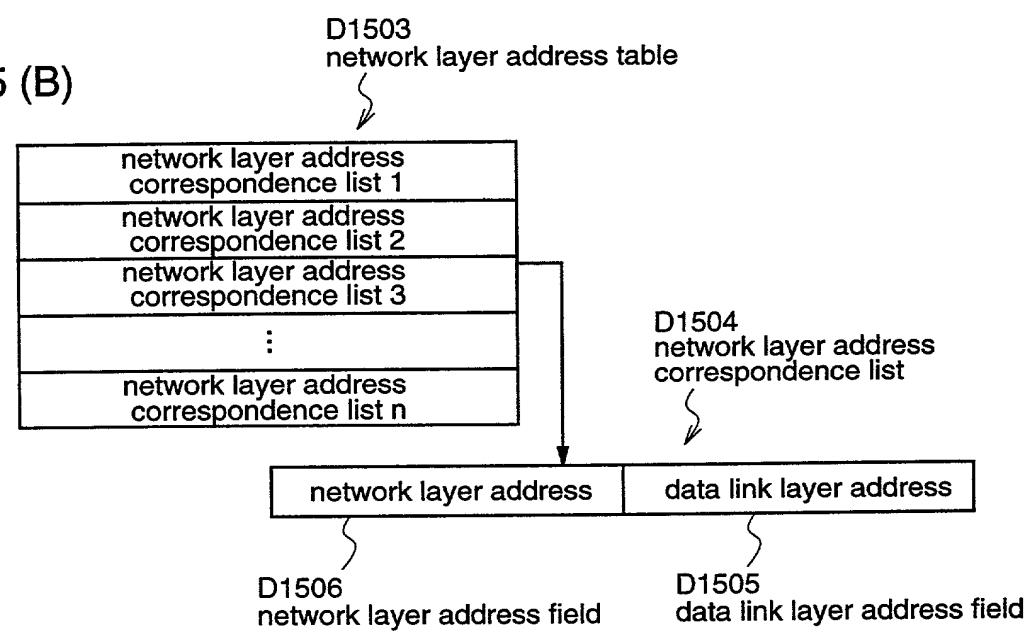
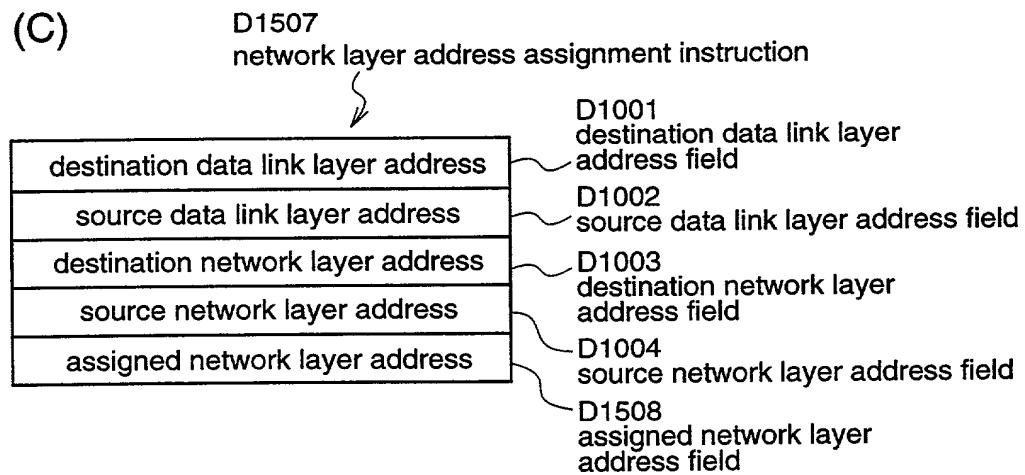


Fig.15 (C)



**Fig. 16**

| (a1) address state of server       | network layer address   | data link layer address |
|------------------------------------|-------------------------|-------------------------|
|                                    | NA1                     | DA1                     |
|                                    | NA2                     | DA2                     |
| (b1) address state of client 1     | network layer address   | data link layer address |
|                                    | NA1                     | DA1                     |
|                                    | NA2                     | DA3                     |
| (b2) address state of client 1     | network layer address   | data link layer address |
|                                    | NA2                     | DA3                     |
| (c1) address state of client 2     | network layer address   | data link layer address |
|                                    | NULL                    | DA2                     |
| (c2) address state of client 2     | network layer address   | data link layer address |
|                                    | NULL                    | DA2                     |
| (d1) data link layer address table | data link layer address | network layer address   |
| DA1                                | NA1                     | NA1                     |
| DA2                                | NA2                     | NULL                    |
| DA3                                | NULL                    | NA2                     |
| DA4                                | NULL                    | NULL                    |
| (e1) network layer address table   | network layer address   | data link layer address |
| NA1                                | DA1                     | DA1                     |
| NA2                                | DA2                     | DA3                     |
| NA3                                | NULL                    | NA3                     |
| NA4                                | NULL                    | NULL                    |
| (e2) network layer address table   | network layer address   | data link layer address |
| NA1                                | DA1                     | DA1                     |
| NA2                                | DA3                     | DA3                     |
| NA3                                | NULL                    | DA2                     |
| NA4                                | NULL                    | NULL                    |
| (e3) network layer address table   | network layer address   | data link layer address |
| NA1                                | DA1                     | DA1                     |
| NA2                                | DA3                     | DA3                     |
| NA3                                | NULL                    | NA3                     |
| NA4                                | NULL                    | NULL                    |

Fig.17

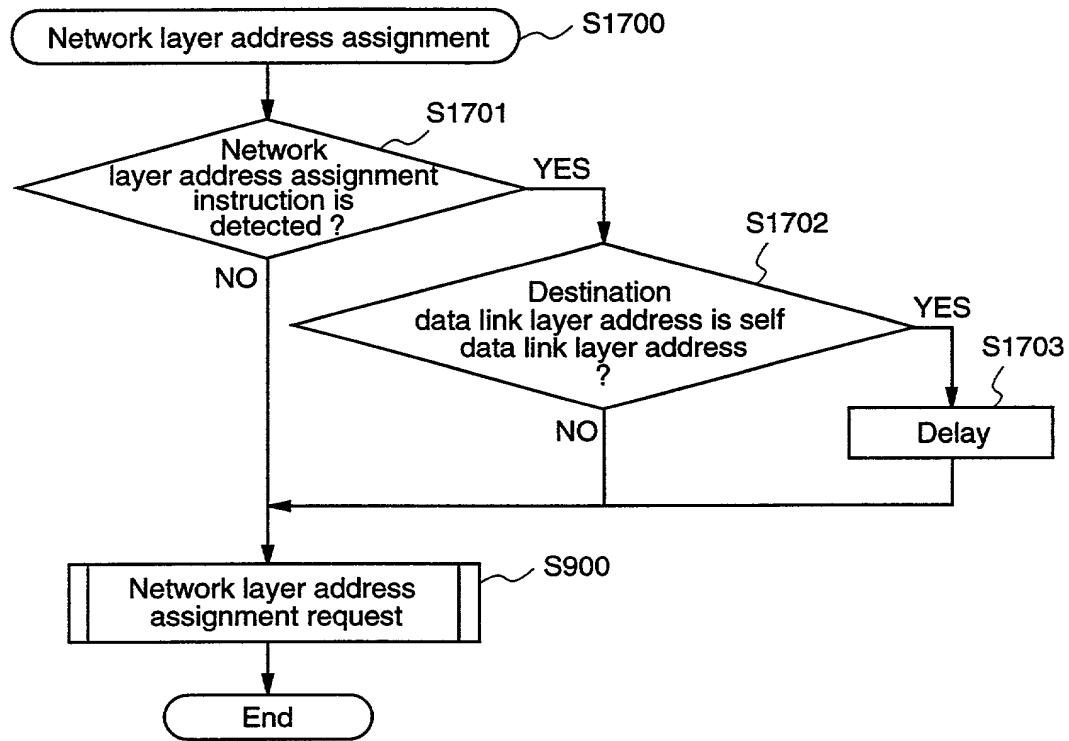
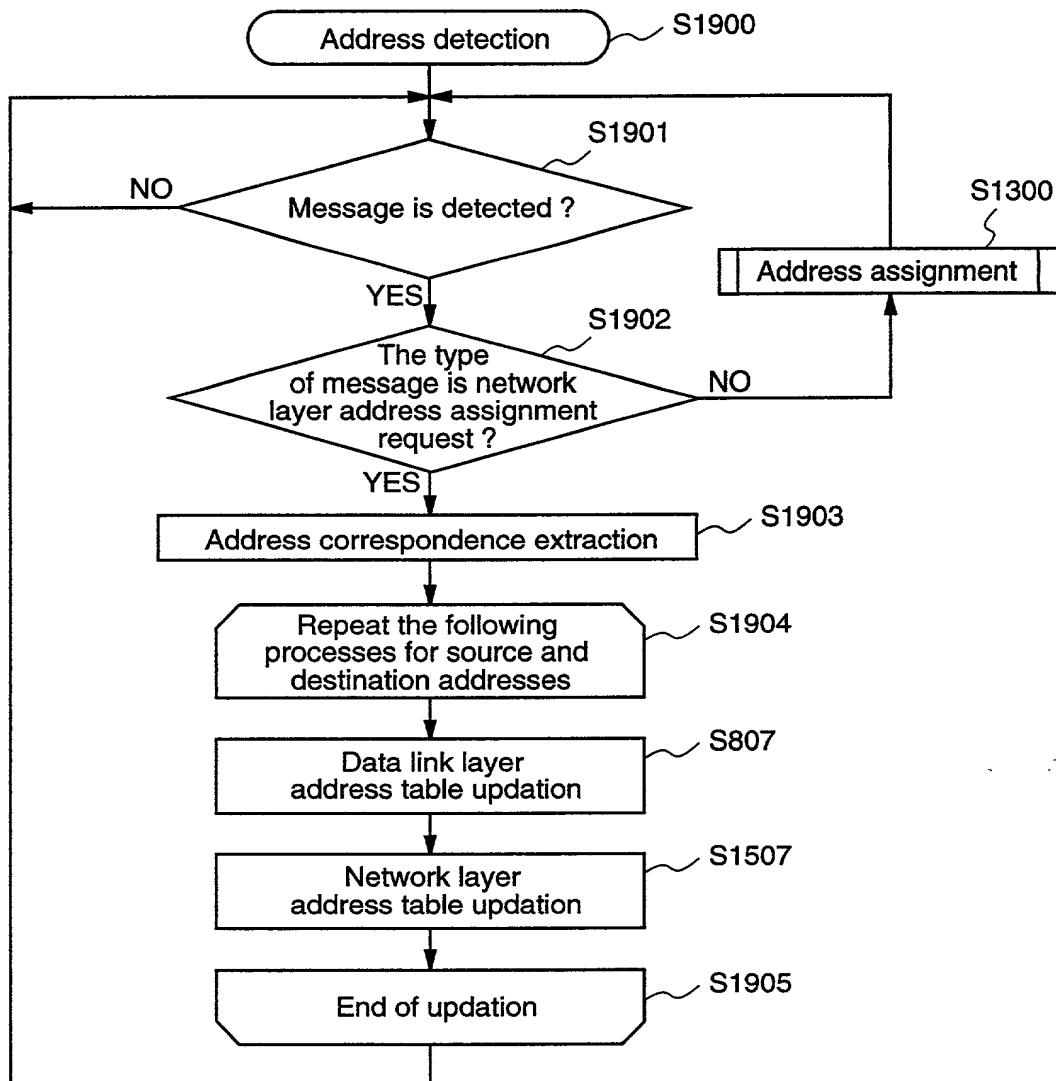


Fig. 18

|                                    |                                    |                                    |                                    |
|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| (a1) address state of server       | (a2) address state of server       | (a3) address state of server       | (a4) address state of server       |
| network layer address              | data link layer address            | network layer address              | data link layer address            |
| NA1                                | DA1                                | NA1                                | DA1                                |
| (b1) address state of client 1     | (b2) address state of client 1     | (b3) address state of client 1     | (b4) address state of client 1     |
| network layer address              | data link layer address            | network layer address              | network layer address              |
| NULL                               | NA2                                | NA2                                | DA3                                |
| (c1) address state of client 2     | (c2) address state of client 2     | (c3) address state of client 2     | (c4) address state of client 2     |
| network layer address              | data link layer address            | network layer address              | network layer address              |
| NULL                               | DA2                                | NULL                               | NA3                                |
| (d1) data link layer address table | (d2) data link layer address table | (d3) data link layer address table | (d4) data link layer address table |
| data link layer address            | network layer address              | data link layer address            | data link layer address            |
| DA1                                | NA1                                | DA1                                | NA1                                |
| DA2                                | NULL                               | DA2                                | NULL                               |
| DA3                                | NULL                               | DA3                                | DA3                                |
| DA4                                | NULL                               | DA4                                | NULL                               |
| (e1) network layer address table   | (e2) network layer address table   | (e3) network layer address table   | (e4) network layer address table   |
| network layer address              | data link layer address            | network layer address              | network layer address              |
| NA1                                | DA1                                | NA1                                | DA1                                |
| NA2                                | NULL                               | NA2                                | NA2                                |
| NA3                                | NULL                               | NA3                                | NA3                                |
| NA4                                | NULL                               | NA4                                | NULL                               |

Fig.19



**Fig.20**

|                                   |                         |                         |  |
|-----------------------------------|-------------------------|-------------------------|--|
| (a1)address state of server       | network layer address   | data link layer address |  |
|                                   | NA1                     | DA1                     |  |
| (b1)address state of client 1     | network layer address   | data link layer address |  |
|                                   | NA3                     | DA1                     |  |
| (c1)address state of client 2     | network layer address   | data link layer address |  |
|                                   | NA2                     | DA3                     |  |
| (d1)data link layer address table | data link layer address | network layer address   |  |
|                                   | DA1                     | NA1                     |  |
|                                   | DA2                     | NA2                     |  |
|                                   | DA3                     | NULL                    |  |
|                                   | DA4                     | NULL                    |  |
| (e1)network layer address table   | network layer address   | data link layer address |  |
|                                   | NA1                     | DA1                     |  |
|                                   | NA2                     | DA2                     |  |
|                                   | NA3                     | NULL                    |  |
|                                   | NA4                     | NULL                    |  |
| (d2)data link layer address table | data link layer address | network layer address   |  |
|                                   | DA1                     | NA1                     |  |
|                                   | DA2                     | NA2                     |  |
|                                   | DA3                     | NA3                     |  |
|                                   | DA4                     | NULL                    |  |
| (e2)network layer address table   | network layer address   | data link layer address |  |
|                                   | NA1                     | DA1                     |  |
|                                   | NA2                     | DA2                     |  |
|                                   | NA3                     | DA3                     |  |
|                                   | NA4                     | NULL                    |  |
| (c2)address state of client 2     | network layer address   | data link layer address |  |
|                                   | NA2                     | DA3                     |  |
| (b2)address state of client 1     | network layer address   | data link layer address |  |
|                                   | NA3                     | DA3                     |  |
| (a2)address state of server       | network layer address   | data link layer address |  |
|                                   | NA1                     | DA1                     |  |
| (a3)address state of server       | network layer address   | data link layer address |  |
|                                   | NA1                     | DA1                     |  |
| (b3)address state of client 1     | network layer address   | data link layer address |  |
|                                   | NA3                     | DA3                     |  |
| (c3)address state of client 2     | network layer address   | data link layer address |  |
|                                   | NA2                     | DA3                     |  |
| (d3)data link layer address table | data link layer address | network layer address   |  |
|                                   | DA1                     | NA1                     |  |
|                                   | DA2                     | NULL                    |  |
|                                   | DA3                     | NA2                     |  |
|                                   | DA4                     | NULL                    |  |
| (e3)network layer address table   | network layer address   | data link layer address |  |
|                                   | NA1                     | DA1                     |  |
|                                   | NA2                     | DA3                     |  |
|                                   | NA3                     | NULL                    |  |
|                                   | NA4                     | NULL                    |  |

Fig.21 Prior Art

